

Are you serious?

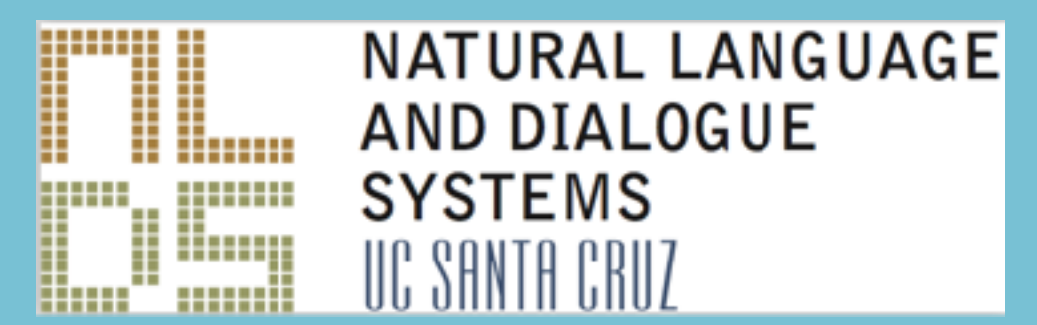
Rhetorical Questions and Sarcasm in Social Media



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Rhetorical Questions in Social Media

Motivation

- Rhetorical Questions (RQs) are a type of figurative language aimed at achieving some pragmatic goal
- Many uses are sarcastic, but there are other uses (Ilie '94, Schaffer '05)
- We note use of **argumentation** in forums and **persuasion** in tweets

	Forums	Twitter
Sarc	If they haven't been discovered yet, HOW THE BLOODY HELL DO YOU KNOW? Ten percent more brains and you'd be pond life.	You know what's the best? Unreliable friends. They're so much fun. #sarcasm #whatever
Other	How is that related to deterrence? Once again, deterrence is preventing through fear of consequences.	Craft ladies, salon owners, party planners? You need to state your #business [link]

Corpus Creation

- We use data from the Internet Argument Corpus for debate (Walker et al. '12), and Twitter
- We develop a "middle-of-post" heuristic to gather data:
 - Speaker asks a question, then continues their turn
 - 75% of these are found to be RQs
- We end up with a large, novel set of RQs in forums and Twitter:

Dataset	Size
RQs in Forums	2,496
RQs in Tweets	7,774

<https://nlds.so.e.ucsc.edu/sarcasm-rq>
<https://nlds.so.e.ucsc.edu/sarcasm2> (Oraby et al. '16)

Identifying RQs and their Uses

RQs vs Information-Seeking Qs

- We look for "information-seeking" questions in the IAC, labeled "factual" (Oraby et al. '15):

If someone is an attorney or in law enforcement, would you please give an interpretation?

- We create a small dataset of ~1K of each class (RQ vs Information-seeking)
- We experiment with simple W2V features on SVM (80/20 train/test)

Class	P	R	F1
RQ	0.74	0.79	0.76
Info-Seeking	0.77	0.72	0.74

Sarcastic vs Other Uses of RQs

- We classify sarcastic/other uses of RQs in forums and Twitter with different levels of context in training, and embedding/LIWC features

Model	Features	Training	Forums		Twitter	
			Sarc F1	Other F1	Sarc F1	Other F1
SVM	W2V Google	RQ	0.72	0.73	0.80	0.78
	W2V Google + LIWC	RQ	0.76	0.77	0.83	0.82
	"	Pre+RQ	0.74	0.76	0.83	0.82
	"	RQ+Post	0.75	0.75	0.83	0.81
LSTM	W2V Twitter	RQ	0.68	0.74	0.73	0.75
	W2V Twitter + LIWC	RQ	0.72	0.75	0.81	0.80
	"	Pre+RQ	0.69	0.76	0.81	0.80
	"	RQ+Post	0.75	0.75	0.82	0.83
"	"	Full Text	0.71	0.74	0.82	0.81

Linguistic Analysis of Sarcastic and Other Uses of RQs

The Effect of Context

- Forums posts are more sensitive to changes in context due to length

	Forums	Twitter
	RQ + Post	Full Tweet
Sarc	Does the pacific ocean truly 'exist'? oh yeah 3000! time to celebrate!	Gasp! Two football players got into it with each other?! How uncivilized! Lets make a big deal about it! #NFLlogic #cowboys
	Pre + RQ	Full Tweet
Other	'Know it all'? I simply see what is negative, stupid, bad, etc., and what is not. Can you say the same about yourself? of course you can, but will it also be valid? Doubtful.	Are you willing to succeed? The answer isn't as simple as you may think. Read my blog post and you'll see why..... [link]

Linguistic Features

- We analyze the most discriminative LIWC features by class and domain

Forums	
2nd Person	Do you ever read headers? You got a mouth on you as big as the grand canyon.
Informal	The hate you're spewing is palpable, yet you can't even see that can you? Hypocrites, ya gotta luv em.
Interrogatives	How do you know it's the truth? If it were definitive [...]
Quantifiers	[...] we have minimum wage, why can't we have maximum wage? So of [...]
Twitter	
Comma	Wait, wait I can't... it's impossible... NO WAY?! - a stiffer track pad?!
3rd Person Plural	How intelligent, they make the laws and then violate [them]? That is absurd!
Swear Words	Idk why I'm fighting my sleep?! Aint s*** else to do
Friends	Can I get 12.7K followers today? :) xo Thanks to everyone who is following me.